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AUTHOR	White, Sheida; Vanneman, Alan
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ABSTRACT

Data from the National Assessment of Educational Progress (NAEP) 1997 Arts Assessment in Music, which covered eighth-grade students only, regardless of whether they had received instruction in music, show that student involvement in a variety of musical activities (playing an instrument in particular) is positively related to student music achievement. Students were assessed on creating, performing, and responding. The assessment found a positive relationship between students responding to music and students "doing" music (creating and performing). Includes 4 tables and web addresses for further information. (LB)

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NAEPFACTS

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Student Musical Activities and Achievement in Music: NAEP 1997 Arts Assessment

Abstract: *Data from the National Assessment of Educational Progress (NAEP) 1997 Arts Assessment in Music, which covered eighth-grade students only, regardless of whether they had received instruction in music, show that student involvement in a variety of musical activities—playing an instrument in particular—is positively related to student music achievement.*

In 1997, the National Center for Education Statistics assessed arts education in the United States for the first time in almost 20 years.[1] Some findings of the assessment were surprising and disappointing at first glance to many arts educators. In music, for example, the assessment found that students attending schools where they received instruction in music three or four times a week did not necessarily outperform students attending schools where music was not taught.[2] The same was true of students attending schools where the great majority of students received instruction in music as compared to students attending schools where very few received instruction in music. (The music assessment was given to a general sample of students, regardless of whether they had received any instruction in music.)

A closer look at in-school instructional activities, most notably, requiring students to play a musical instrument, showed a consistent relationship to higher student achievement in music. This *NAEPfact* will discuss relationships between students' achievement in music and their involvement in a variety of in- and out-of-school activities. These activities can range from students listening to music on their own to being required to play their instruments in class. Analysis of data gathered in the assessment show a relationship between many such activities and higher student achievement in music.

The NAEP Arts Assessment

The NAEP arts assessment measured students' ability to create and perform works of art as well as to respond to existing works. For music, students were assessed on three arts processes: *Creating*, *Performing*, and *Responding*. In the arts assessment framework,

- *Creating* refers to expressing ideas and feelings in the form of an original work of art, for example a musical improvisation;
- *Performing* refers to performing an existing work, a process that calls upon the interpretive or re-creative skills of the student; and
- *Responding* refers to observing, describing, analyzing, and evaluating works of art.

In order to capture all three processes, the arts assessment exercises included *Creating* and *Performing* tasks in addition to standard paper-and-pencil tasks. These tasks, among other things, asked students to sing and play instruments; to sight-read music; and to improvise. In these tasks, students were also asked to comment in writing on their

work. The *Responding* tasks asked students to describe, analyze, interpret, and evaluate works of art, both by writing short statements and essays and by answering multiple-choice questions.

The NAEP 1997 Music Assessment used a nationally representative sample of 2,275 eighth-grade students. All students engaged in *Responding* and *Creating* and/or *Performing* tasks.[3]

Student Achievement

Student performance on the arts assessment is presented in several ways. The overall summaries of results treat each of the three processes—*Creating*, *Performing*, and *Responding*—separately. Responding results for music are summarized on a scale that ranges from 0 to 300. Scores that fell in the bottom 25 percent of the scale were labeled "Lower Level" scores; those in the middle 50 percent were labeled "Middle Level"; and those in the top 25 percent were labeled "Upper Level."

Creating and *Performing* results for music are not summarized using a standard NAEP scale. Instead of a scale, *Creating* and *Performing* results are presented as average percents of the maximum possible score on exercises. These average scores represent the overall mean percentage students earned of the possible number of points for the components of *Creating* and *Performing* tasks. For example, if the maximum possible score on the *Creating* tasks in the music assessment was 129, and the average student had a combined score of 43, then the average percent would be 33 (i.e., 43 is 33 percent of 129).

Table 1.—Student participation in musical activities by level of performance on the music Responding scale

In-School Student Activities	Percentage of Students in the Lower Level of the Scale	in the Middle Level of the Scale	in the Upper Level of the Scale
Play in a band	6	10*	44*†
Play in an orchestra	2	1	7*†
Sing in a chorus or choir	9	21*	35*†
Take private singing lessons	3†	1	3
Take private lessons on an instrument	3	5	25*†
Own a musical instrument	15	33*	77*†
Go with class to three or more concerts in the past year	5	10*	25*†
Out-of-School Activities			
Play a musical instrument	11	20*	58*†
Play with a group, band, or orchestra	7	7	15*†
Sing in a group, chorus, or choir	10	16*	21*†
Take private lessons on a musical instrument or in singing	4	5	29*†
Listen to musical tapes, CDs, or records	79	95*	97*
Talk with family or friends about music	30	38*	52*†

* Higher than Lower Level. † Higher than Middle Level.

How to read this table: This table gives the percentages of students scoring at the Lower (bottom 25%), Middle (middle 50%), and Upper (upper 25%) Levels of the Music Responding Scale who answered affirmatively to a variety of questions regarding their in-school and out-of-school activities. For example, 6% of those scoring in the Lower Level said they played in a band, while 10% of those scoring in the Middle Level, and 44% of those scoring in the Upper Level, said they did so.

All tests of statistical significance were made at the .05 level with appropriate adjustments for multiple comparisons.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1997 Arts Assessment.

Differences in music achievement are reported here only if they are statistically significant. This means that the observed differences in the samples are likely to reflect real differences in the population and are highly unlikely to have resulted from chance factors associated with sampling variability. Reporting of these differences is not intended to imply any judgment about cause and effect nor to make any judgment on the educational relevance of the differences.

Responding Scores and Students' Music Experiences

As table 1 demonstrates, student involvement in many different musical activities was positively re-

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lated to higher *Responding* scores. In fact, of the 13 activities surveyed, only 1, "Take private singing lessons," did not show a positive relationship. For 8 of the 13 activities considered, Middle Level students were more likely to be engaged in the selected activity than Lower Level students. Upper Level students were more likely to be active than Lower Level students in 12 of the 13 activities, and more likely to be active than Middle Level students in 11 of the activities.

Performing and Creating Scores and In-School Musical Activities

Table 2 provides data on students' in-school musical activities, as they reported them, in comparison with students' *Performing* and *Creating* scores. Students were asked how often their teachers asked them to perform certain musical activities.

As the table indicates, some 34 to 40 percent of eighth-grade students reported that they were not currently enrolled in music class. For each of the five activities considered, these students had lower scores than at least one group of students who were taking music. However, not all students who were taking music had higher scores than students who were not.

It is notable that students who were asked to play their instruments almost every day had

Table 2.—Students' music Performing and Creating scores by their involvement in in-school musical activities

When you take music class in school, how often does your teacher do each of the following things?	Percentage of Students[1]	Average Performing Score (0–100%)	Average Creating Score (0–100%)
Play music for you to listen to			
Almost every day	28	33	33
Once or twice a week	13	39*	42*†‖
Once or twice a month	10	44*‖	42*†‖
Never or hardly ever	14	35	33
I don't have music	34	29	30
Ask you to sing			
Almost every day	13	40*	42*†§
Once or twice a week	11	36	35
Once or twice a month	6	32	37
Never or hardly ever	35	36*	35
I don't have music	35	29	31
Ask you to play instruments			
Almost every day	16	53*†‡§	50*†‡§
Once or twice a week	6	38*	41*†
Once or twice a month	6	35	35
Never or hardly ever	32	31	31
I don't have music	40	27	30
Ask you to write down music			
Almost every day	5	#	39*
Once or twice a week	10	#	37*
Once or twice a month	11	#	39*
Never or hardly ever	36	#	37*
I don't have music	38	#	30
Ask you to make up your own music			
Almost every day	4	#	40
Once or twice a week	5	#	35
Once or twice a month	8	#	34
Never or hardly ever	47	#	38*
I don't have music	37	#	30

[1]Percentages in this column may not sum to 100 due to rounding.

Apply to students assigned Creating tasks only. For this reason, no data appear in the "Average Performing Score" column.

* Higher than "I don't have music." † Higher than "Never or hardly ever." ‡ Higher than "Once or twice a month." § Higher than "Once or twice a week." ‖ Higher than "Almost every day."

All tests of statistical significance were made at the .05 level with appropriate adjustments for multiple comparisons.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1997 Arts Assessment.

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higher scores than all other students, for both *Performing* and *Creating*. Students whose teachers asked them to sing almost every day had higher *Creating* scores than all students except those whose teachers asked them to sing once or twice a month. However, in *Performing*, students whose teachers asked them to sing almost every day outscored only those students who did not take music; they did not outscore students who sang in class less frequently.

It is also notable that students whose teachers played music for them to listen to once or twice a month had higher scores than students whose teachers played music for them to listen to almost every day, for both *Performing* and *Creating*. These students also outscored students who did not take music.

For *Creating* scores only, students whose teachers played music for them to listen to once or twice a week or once or twice a month also outperformed students whose teachers never or hardly ever played music for them to listen to. Thus, for *Creating* scores, there is an overall pattern that students whose teachers occasionally required them to listen to music in class had higher average

Table 3.—Students' music Performing and Creating scores by their involvement in in-school and out-of-school musical activities

	Percentage of Students	Average Performing Score (0–100%)	Average Creating Score (0–100%)
Which of the following activities do you do in school?			
Play in a Band			
Yes	18	52*	50*
No	82	30	31
Play in an Orchestra			
Yes	3	—	53*
No	97	33	34
Sing in a Chorus or Choir			
Yes	22	43*	40*
No	78	31	33
When you are NOT in school, do you ever do the following things on your own, NOT in connection with schoolwork?			
Take Private Lessons on a Musical Instrument or in Singing			
Yes	11	59*	52*
No	89	31	32
Listen to a Musical Tape, CD or Record			
Yes	92	35*	35*
No	8	21	29
Read a Book about Music			
Yes	12	41*	42*
No	88	33	33
Listening to or attending musical performances			
In the last year, how many times did your class go to a concert?			
Three or more	13	43*†	45*
Once or twice	26	37*	35*
None	61	32	32
Have you ever listened to a musical performance at school?			
Yes	77	36*	36*
No	23	24	30

* Higher than "No" or "None." † Higher than "Once or twice."

— Sample size is insufficient to permit a reliable estimate.

All tests of statistical significance were made at the .05 level with appropriate adjustments for multiple comparisons.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1997 Arts Assessment.

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scores than both those students whose teachers rarely required them to listen to music and those whose teachers required them to do so almost every day.

Performing and Creating Scores and In- and Out-of-School Activities

Table 3 shows the percentages of students engaged in various in- and out-of-school musical activities and their *Performing* and *Creating* scores. In every case where data were available, students who had engaged in the activity had higher scores than those who had not. There is a substantial overlap in categories for table 3 and table 1, which considers students' *Responding* scores. Both tables demonstrate a generally positive relationship between involvement in musical activities and student achievement in music.

Relationships Among Responding and Performing and Creating Results

As table 4 demonstrates, students who scored higher on the *Responding* portion of the music assessment were likely to score higher on both the *Performing* and *Creating* portions of the music assessment as well. For both *Performing* and *Creating*, students who scored in the Middle Level of the Responding Scale had higher average scores than those who scored in the Lower Level, and students who scored in the Upper Level of the Responding Scale had higher average scores than those who scored in the Middle Level.

Conclusion

The NAEP 1997 Arts Assessment in Music confirmed what many educators would predict, that student involvement in musical activities is positively related to student achievement in music. The assessment also found a positive relationship between students responding to music and students "doing" music—creating and performing.

These findings are not demonstrations of causal relationships. For example, schools that initiate a requirement that students play their instruments almost every day may have a more extensive musical program than most schools; or they may be located in higher income areas, where it is not unreasonable to ask that every student purchase an inexpensive instrument, or where the school can afford to provide every student with an instrument. A wide variety of factors influence student achievement in any subject. But the findings highlighted in this *NAEPfact* can have relevance to future research and practice in music education.

Table 4.—Average student scores on Performing and Creating by level of performance on the music Responding scale

Level of Performance on the Music Responding Scale	Percent Correct on the	
	Performing Scale	Creating Scale
Lower	18	24
Middle	29*	30*
Upper	56*†	52*†

* Higher than Lower Level. † Higher than Middle Level.
All tests of statistical significance were made at the .05 level with appropriate adjustments for multiple comparisons.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1997 Arts Assessment.

Endnotes

[1]NCES assessed music in 1972 and 1978 and visual arts in 1975 and 1978.

[2]*NAEP 1997 Arts Report Card*, pp. 144 and following.

[3]A total of 567 students currently engaged in a musical activity (either instrumental or vocal) were given an additional Creating or Performing task, but results for this additional task are not discussed in this *NAEPfact*. For full information, see the *NAEP 1997 Arts Report Card*.

For Further Information

The NAEP 1997 Arts Report Card, NCES 1999–486, is the complete report. Single copies are available free from ED Pubs, P.O. Box 1398, Jessup, Md. 20794–1398. Copies may also be obtained over the World Wide Web at **http://nces.ed.gov/nationsreportcard/arts/arts.asp**

The NAEP 1997 Arts CD-ROM, NCES 1999–485, is a multimedia product that contains the full text of the Report Card, plus numerous examples of student work, along with explanations of scoring and other additional information. Single copies are available

free from ED Pubs, P.O. Box 1398, Jessup, Md. 20794–1398. Copies may also be obtained over the World Wide Web at
http://nces.ed.gov/nationsreportcard/arts/arts.asp

The NAEP 1997 Arts Education Assessment Framework, developed by the National Assessment Governing Board, can be accessed online at
http://www.nagb.org

NAEPfacts briefly summarize findings from the National Assessment of Educational Progress (NAEP). The series is a product of the National Center for Education Statistics, Gary Phillips, Acting Commissioner, and Peggy Carr, Associate Commissioner for Education Assessment. This issue of *NAEPfacts* was written by Sheida White of NCES and Alan Vanneman of the Education Statistics Services Institute.

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